

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Richland
2800 George Washington Way
Richland, WA 99352
Tel: (509)375-3131

TestAmerica Job ID: 300-6583-1
TestAmerica Sample Delivery Group: WC2621
Client Project/Site: S18-012

For:
CH2M Hill Plateau Remediation Company
825 Jadwin Avenue
Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:
12/26/2017 12:48:54 PM

Ashley Worthy, Project Manager I
(509)375-3131
ashley.worthy@testamericainc.com



LINKS

Review your project results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the attached signature.

The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples.

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
SDG: WC2621

Qualifiers

General Chemistry

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
SDG: WC2621

Job ID: 300-6583-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-6583-1**

Comments

No additional comments.

Receipt

The samples were received on 12/18/2017 12:48 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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CH2MH11 Plateau
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S18-012-196
Page 1 of 1

Collector: Daniel Klug
CHPRC

SAF No.: S18-012

Project Title: SURV, DECEMBER 2017

Shipped To (Lab): TestAmerica Incorporated, Rich

Protocol: SURV

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3FJ36	X	W	DEC 18 2017	10/5	1x60-mL aG	7196_CR6: COMMON	24 Hours	COOL <=6C
B3FJ35	N	W			1x60-mL aG	7196_CR6: COMMON	24 Hours	COOL <=6C

W6583
W62021



300-6583 COC

Relinquished By: *[Signature]* DEC 18 2017 1248
Received By: L. Anderson, TARI *[Signature]* 12/18/17 1248

Relinquished By: _____ Signature _____ Date/Time _____
Received By: _____ Signature _____ Date/Time _____

Relinquished By: _____ Signature _____ Date/Time _____
Received By: _____ Signature _____ Date/Time _____

Relinquished By: _____ Signature _____ Date/Time _____
Received By: _____ Signature _____ Date/Time _____

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): _____
Disposed By: _____ Date/Time: _____



CH2M HILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# S18-012-197 Page 1 of 1

Collector: Daniel Klug
CHPRC

Project Title: SURV, DECEMBER 2017

Shipped To (Lab): TestAmerica Incorporated, Rich

Protocol: SURV

Contact/Requester: Karen Waters-Husted

Sampling Origin: Hanford Site

Logbook No.: HNF-N-506 - 96 / 72

Method of Shipment: GOVERNMENT VEHICLE

Priority: 15 Days

Telephone No.: 509-376-4650

Purchase Order/Charge Code: 300071

Ice Chest No.: N/A

Bill of Lading/Air Bill No.: N/A

Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARK
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
 N/A

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3FJ39	N	DEC 18 2017	0927	1x60-mL aG	7196_CR6: COMMON	24 Hours	COOL <=6C
B3FJ40	Y			1x60-mL aG	7196_CR6: COMMON	24 Hours	COOL <=6C

10583
WC 2011

Relinquished By: Daniel Klug
Signature: [Signature] Date/Time: DEC 18 2017 1248

Received By: L Anderson, TRL
Signature: [Signature] Date/Time: 12/18/17

Relinquished By: [Signature] Date/Time: [Date/Time]

Received By: [Signature] Date/Time: [Date/Time]

Relinquished By: [Signature] Date/Time: [Date/Time]

Received By: [Signature] Date/Time: [Date/Time]

Relinquished By: [Signature] Date/Time: [Date/Time]

Received By: [Signature] Date/Time: [Date/Time]

- Matrix *
- S = Soil
 - SE = Sediment
 - SO = Solid
 - SL = Sludge
 - W = Water
 - O = Oil
 - A = Air
 - DS = Drum Solids
 - DL = Drum Liquid
 - T = Tissue
 - WI = Wipe
 - L = Liquid
 - V = Vegetation
 - X = Other

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process):

Disposed By: [Signature] Date/Time: [Date/Time]

Detection Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
 SDG: WC2621

Client Sample ID: B3FJ36

Lab Sample ID: 300-6583-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0043		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3FJ35

Lab Sample ID: 300-6583-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0038	B	0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3FJ39

Lab Sample ID: 300-6583-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.015		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3FJ40

Lab Sample ID: 300-6583-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.015		0.0040	0.0015	mg/L	1		7196A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
 SDG: WC2621

Client Sample ID: B3FJ36
 Date Collected: 12/18/17 10:15
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-1
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0043		0.0040	0.0015	mg/L			12/18/17 13:50	1

Client Sample ID: B3FJ35
 Date Collected: 12/18/17 10:15
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-2
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0038	B	0.0040	0.0015	mg/L			12/18/17 13:51	1

Client Sample ID: B3FJ39
 Date Collected: 12/18/17 09:27
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-3
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.015		0.0040	0.0015	mg/L			12/18/17 13:51	1

Client Sample ID: B3FJ40
 Date Collected: 12/18/17 09:27
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-4
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.015		0.0040	0.0015	mg/L			12/18/17 13:51	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
 SDG: WC2621

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-9992/3
 Matrix: Water
 Analysis Batch: 9992

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			12/18/17 13:47	1

Lab Sample ID: LCS 300-9992/4
 Matrix: Water
 Analysis Batch: 9992

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.253		mg/L		101	80 - 120

Lab Sample ID: 300-6583-1 MS
 Matrix: Water
 Analysis Batch: 9992

Client Sample ID: B3FJ36
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.0043		0.0501	0.0567		mg/L		105	75 - 125

Lab Sample ID: 300-6583-1 DU
 Matrix: Water
 Analysis Batch: 9992

Client Sample ID: B3FJ36
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.0043		0.00430		mg/L		0	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
 SDG: WC2621

General Chemistry

Analysis Batch: 9992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6583-1	B3FJ36	Total/NA	Water	7196A	
300-6583-2	B3FJ35	Total/NA	Water	7196A	
300-6583-3	B3FJ39	Total/NA	Water	7196A	
300-6583-4	B3FJ40	Total/NA	Water	7196A	
MB 300-9992/3	Method Blank	Total/NA	Water	7196A	
LCS 300-9992/4	Lab Control Sample	Total/NA	Water	7196A	
300-6583-1 MS	B3FJ36	Total/NA	Water	7196A	
300-6583-1 DU	B3FJ36	Total/NA	Water	7196A	

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Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
 SDG: WC2621

Client Sample ID: B3FJ36
 Date Collected: 12/18/17 10:15
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-1
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			9992	12/18/17 13:50	HR	TAL RCH

Client Sample ID: B3FJ35
 Date Collected: 12/18/17 10:15
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-2
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			9992	12/18/17 13:51	HR	TAL RCH

Client Sample ID: B3FJ39
 Date Collected: 12/18/17 09:27
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-3
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			9992	12/18/17 13:51	HR	TAL RCH

Client Sample ID: B3FJ40
 Date Collected: 12/18/17 09:27
 Date Received: 12/18/17 12:48

Lab Sample ID: 300-6583-4
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			9992	12/18/17 13:51	HR	TAL RCH

Client Sample ID: Method Blank
 Date Collected: N/A
 Date Received: N/A

Lab Sample ID: MB 300-9992/3
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			9992	12/18/17 13:47	HR	TAL RCH

Client Sample ID: Lab Control Sample
 Date Collected: N/A
 Date Received: N/A

Lab Sample ID: LCS 300-9992/4
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			9992	12/18/17 13:47	HR	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
SDG: WC2621

Client Sample ID: B3FJ36

Lab Sample ID: 300-6583-1 MS

Date Collected: 12/18/17 10:15

Matrix: Water

Date Received: 12/18/17 12:48

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			9992	12/18/17 13:48	HR	TAL RCH

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

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Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
SDG: WC2621

Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL RCH

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131



Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-012

TestAmerica Job ID: 300-6583-1
SDG: WC2621

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-6583-1	B3FJ36	Water	12/18/17 10:15	12/18/17 12:48
300-6583-2	B3FJ35	Water	12/18/17 10:15	12/18/17 12:48
300-6583-3	B3FJ39	Water	12/18/17 09:27	12/18/17 12:48
300-6583-4	B3FJ40	Water	12/18/17 09:27	12/18/17 12:48

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-6583-1

SDG Number: WC2621

Login Number: 6583

List Number: 1

Creator: Bock, Julie A

List Source: TestAmerica Richland

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	